

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
PHASE VI PALM PLATE, ITEM 106 (1) LEFT (1) RIGHT ----- 0106-812149 (2)	1/1	106FM07X Palm Plate cracked.  Damaged or degraded fiberglass material.	END ITEM: Punctured bladder due to fiberglass.  GFE INTERFACE: Suit gas leakage to ambient. Depletion of primary O2 supply and SOP. Rapid depressurizati n of SSA beyond SOP makeup capability.  MISSION: Abort EVA.	A. Design - An impact resistant fiberglass palm plate is provided in the palm area of t restraint. This one piece plate enhances hand dexterity by reducing balloo in the palm. The perimeter shape is derived from the laser scan hand data files. The palm plate is sewn into a Dacron fabric pocket to eliminate bla abrasion. The edges of the fiberglass are contoured to provide a friendly interfacing surface.  B. Test - Acceptance: Component - See Inspection.  PDA Test - The following tests are conducted at the glove assembly level in accordance ILC Document 0111-710112:  1. Initial leak test at 4.3 +/- 0.1 psig to verify leakage less than 8.0 scc/min. 2. Proof pressure test at 8.0 + 0.2 - 0.0 psig to verify no structural dan 3. Proof pressure leak test at 4.3 +/- 0.1 psig to verify leakage less tha scc/min. 4. Final leak test at 4.3 +/- 0.1 psig to verify leakage less than 8.0 scc  CREW/VEHICLE: Loss of crewmembers.  TIME TO EFFECT /ACTIONS: Seconds.  TIME AVAILABLE: N/A  TIME REQUIRED: N/A  REDUNDANCY SCREENS: A-N/A B-N/A C-N/A  Requirements ----- S/AD ---- Actual ----- Glove Joint Cycles Flex/Ext (fingers) 45142 39169 Wrist Joint Cycles Add/Abd 17104 14830 Flex/Ext 12646 10830 Rotations 20112 17393 Pressurized Hours 229 198 Pressurized Cycle @ 4.3 psig 97 99 5.3 psig 37 63 6.6 psig 16 18 Don/Doff Cycles 49 49 The glove assembly was successfully subjected to an ultimate pressure of 11 psig during Certification Testing (Ref. ILC doc 0111-712701). This is 1.5 the maximum BTA operating pressure based on 8.8 psig.
				C. Inspection - Components and material manufactured to ILC requirements at an approved sup are documented from procurement through shipping by the supplier. ILC incor

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		106FM07X		<p>receiving inspection verifies that the materials received are as identified the procurement documents, that no damage has occurred during shipment and supplier certifications have been received which provide traceability information.</p> <p>The following MIP's are performed for visual inspection of sewn seams during glove restraint manufacturing process to assure that this particular failure cause is precluded from the fabricated item.</p> <p>1. Visual inspection of seams and spandex covering for defective threads and material.</p> <p>During PDA, the following inspection points are performed at the glove assembly level in accordance with ILC Document 0111-710112:</p> <p>1. Visual inspection for fabric or material degradation. 2. Visual inspection for damage following proof pressure test and restraint loading.</p> <p>D. Failure History - None.</p> <p>E. Ground Turnaround - Tested per FEMU-R-001, Pre-Flight Final Glove Structural. The glove restraint and bladder assembly is subjected to a visual inspection (interior and exterior surfaces) to the extent possible for structural integrity, material degradation or damage.</p> <p>F. Operational Use - Crew Response - Pre/Post EVA: If during airlock operations, repress airlock. Consider use backup gloves. EVA: When CWS data confirms SOP activation, abort EVA.</p> <p>Special Training - Standard training covers this failure mode.</p> <p>Operational Considerations - Flight rule A15.1.2-2 of "Space Shuttle Operational Flight Rules", NSTS-128 defines go/no go criteria related to EMU pressure integrity. Generic EVA Checklist, JSC-48023, procedures Section 3 (EMU Checkout) and 4 (EVA prep) verify hardware integrity and systems operational status prior to EVA. Real Time Data System allows ground monitoring of EMU systems.</p>

EXTRAVEHICULAR MOBILITY UNIT  
SYSTEMS SAFETY REVIEW PANEL REVIEW  
FOR THE  
I-106 GLOVE ASSEMBLY  
CRITICAL ITEM LIST (CIL)

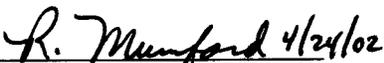
EMU CONTRACT NO. NAS 9-97150

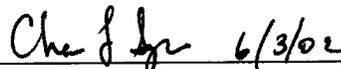
Prepared by:   
HS - Project Engineering

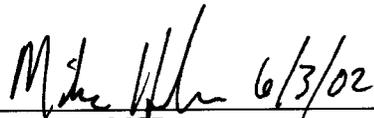
Approved by:  22mar02  
NASA - SSA/SSM

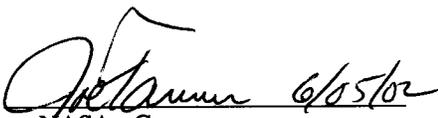
  
HS - Reliability

 5/23/02  
NASA - EMU/SSM

 4/24/02  
HS - Engineering Manager

 6/3/02  
NASA - S & MA

 6/3/02  
NASA - MOD

 6/5/02  
NASA - Crew

 6/3/02  
NASA - Program Manager